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REMARKS

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The Applicants respectfully request reconsideration of this application in view of the above amendments and the following remarks.

Specification

The Examiner has asserted that "at least one annealing chamber" is added matter which is not supported by the original disclosure. In particular, the Examiner has asserted that the original specification only indicates that one and only one annealing chamber is present.

Applicants respectfully disagree. At the top of page 9, it is clearly stated that "More than one annealing chamber 232 can also be provided". Nevertheless, in order to expedite allowance, Applicants have changed "at least one annealing chamber" to "an annealing chamber" or "the annealing chamber". It is to be understood that the claims recite that the apparatus comprises the annealing chamber, and that there may in fact be more than one annealing chamber, and this would be encompassed by the claims.

Drawings

The Examiner has objected to the drawings under 37 CFR 1.83(a). In particular, the Examiner has asserted that the "metal deposition chamber to deposit metal layers on wafers" must be shown or the features cancelled from the claims.

Applicants respectfully submit that the metal deposition chamber to deposit metal layers on wafers is shown in the drawings. Figure 2 shows electroplating chambers 212. Figure 3 shows CVD chambers 342. Figure 4 explicitly shows metal deposition chambers 462. The first paragraph of the Detailed Description makes it clear that "Examples of metal deposition tools are electroplating tools or chemical vapor deposition

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(CVD) tools". Furthermore, it is well known that metal deposition chambers, such as electroplating tools and CVD tools, may deposit layers on wafers.

Accordingly, the rejection is believed to be inappropriate, and Applicants respectfully request that the objection be withdrawn.

Claim Objections

The Examiner has objected to claims 68, 69, 77 and 78 under 37 C.F.R. 1.75(c).

Applicants respectfully submit that claims 68 and 77 have been cancelled.

With regard to claims 69 and 78, Applicants respectfully submit that "consisting essentially of" is not synonymous with "comprising". In Henley, an approach is taken where a cluster tool including various different kinds of chambers (e.g., an oxidation chamber, a plasma immersion ion implantation chamber, a reactive ion etch chamber, a plasma surface treatment chamber, a wafer bonding chamber, a controlled cleavage process chamber, a thermal annealing chamber, a chemical mechanical polishing chamber, a thin film deposition chamber, and a wafer input/output chamber. Another approach, as described in the background of the present application, is to include separate tools with physical transfer of wafers between tools. For example, as shown in Fig. 1, electroplating chambers and CMP chambers are included on different tools. Applicants content that the existence of the various different kinds of chambers on the cluster tool, aside from those recited in claims 69 and 78, are excluded by the "consisting essentially of" language. The presence of all needed chambers on one tool, or the cluster tool approach, material change the need to physically transfer wafers between separate tools.

Claim Rejections – 35 U.S.C. § 112

(1) The Examiner has rejected claims 55-80 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. In particular, the Examiner has asserted that there does not appear to be a written description of the claim limitation "at least one annealing chamber" in the application as filed.

Applicants respectfully disagree. At the top of page 9, it is clearly stated that "More than one annealing chamber 232 can also be provided". Nevertheless, in order to expedite allowance, Applicants have changed "at least one annealing chamber" to "an annealing chamber" or "the annealing chamber". It is to be understood that the claims recite that the apparatus comprises the annealing chamber, and that there may in fact be more than one annealing chamber, and this would be encompassed by the claims.

(2) The Examiner has rejected claim 56 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

Applicants respectfully submit that claim 56 has been amended to overcome the reason for rejection.

(3) The Examiner has rejected claims 55-80 under 35 U.S.C 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

For the reasons discussed above, in order to expedite allowance, Applicants have changed "at least one annealing chamber" to "an annealing chamber" or "the annealing chamber". Therefore, the rejection is believed to be moot.

(4) The Examiner has rejected claims 57, 59, 60, and 66 due to insufficient antecedent basis. Applicants have amended claims to overcome the reasons for rejection, and request that the rejection be withdrawn.

35 U.S.C. §102(e) Rejection - Henley

The Examiner has rejected claims 55-63, 65, 67-72, 74 and 76-80 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,207,005 issued to Henley et al. (hereinafter referred to as "Henley"). The Applicants respectfully submit that the present claims are allowable over Henley.

Claim 55 recites a wafer processing apparatus comprising:

"a plurality of metal deposition chambers, the metal deposition chambers to deposit metal layers on wafers;

an annealing chamber, the annealing chamber integrated with the wafer processing apparatus, the annealing chamber to anneal the metal layers to stabilize hardness of the metal layers prior to chemical mechanical polishing;

a robot configured to move the wafers having the metal layers deposited thereon from the metal deposition chambers directly to the annealing chamber shortly after the metal layers have been deposited on the wafers."

Henley does not teach or suggest these limitations. In particular, Henley does not teach or suggest a robot configured to move wafers having metal layers deposited thereon from metal deposition chambers directly to an annealing chamber shortly after the metal layers have been deposited on the wafers.

In the previous Office Action, the Examiner appears to have ignored the acts performed by the robot. Applicants have amended claim 55 to make it clear that movement performed by the robot is not a mere possible movement but rather one for which the robot has been specifically configured to perform through programming, or other known approaches known in the arts to configure robots. In contrast, the robot discussed in Henley is not specifically configured to perform these movements.

Furthermore, Henley does not teach or suggest the desirability of configuring the robot to perform these tasks. Applicants remind the Examiner that the mere fact that the

prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.

For at least these reasons, claim 55 and its dependent claims are believed to be allowable over Henley.

Independent claims 67 and 76 each recite that the robot is configured to perform movements that are not disclosed in Henley. Accordingly, independent claims 67 and 76, and their respective dependent claims, are believed to be allowable over Henley.

35 U.S.C. §103(a) Rejection - Henley

The Examiner has rejected claims 64, 66, 73 and 75 under 35 U.S.C. §103(a) as being unpatentable over Henley.

As discussed above, Henley does not teach or suggest the limitations of the independent claims 55, 67, and 76. Accordingly, for at least this reason, claims 64, 66, 73 and 75 are believed to be allowable. At this time, Applicants elect not to address other aspects of the rejection of these dependent claims.

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Conclusion

In view of the foregoing, it is believed that all claims now pending patentably define the subject invention over the prior art of record and are in condition for allowance. Applicants respectfully request that the rejections be withdrawn and the claims be allowed at the earliest possible date.

Request For Telephone Interview

The Examiner is invited to call Brent E. Vecchia at (303) 740-1980 if there remains any issue with allowance of the case.

Request For An Extension Of Time

The Applicants respectfully petition for an extension of time to respond to the outstanding Office Action pursuant to 37 C.F.R. § 1.136(a) should one be necessary. Please charge our Deposit Account No. 02-2666 to cover the necessary fee under 37 C.F.R. § 1.17 for such an extension.

Charge Our Deposit Account

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

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